

**WHAT IS CLAIMED IS:**

1. A system for controlling a V-belt type continuously variable transmission (CVT) for a vehicle with a prime mover, comprising:

primary and secondary pulleys arranged on input and output sides, the pulleys  
5 having V-grooves, the pulleys being subjected to primary-pulley and secondary-pulley pressures produced from a line pressure;

a V-belt looped over the primary and secondary pulleys to engage in the V-grooves;

a shift actuator having a first position corresponding to a first target shift ratio, the  
10 shift actuator being operated to the first position to change a width of the V-grooves through a differential pressure between the primary-pulley and secondary-pulley pressures, conforming a shift ratio obtained from a rotational-speed ratio between the primary and secondary pulleys to the first target shift ratio; and

an electronic control unit (ECU) which controls the shift actuator, the ECU  
15 being so programmed as to:

determine if the primary-pulley pressure reaches a predetermined value within a predetermined period after a start of the prime mover; and

change the first position of the shift actuator to a second position of the shift actuator corresponding to a second target shift ratio if it is determined that the  
20 primary-pulley pressure fails to reach the predetermined value, the second target shift ratio being on a high-speed side with respect to a third position of the shift actuator corresponding to a third target shift ratio to be achieved if it is determined that the primary-pulley pressure reaches the predetermined value.

25 2. The system as claimed in claim 1, wherein the second position of the shift actuator is located on the high-speed side with respect to a fourth position of the shift actuator corresponding to the shift ratio achieved by moving back the shift ratio during a tractive cruising of the vehicle by the secondary-pulley pressure produced at the start of the prime mover after the tractive cruising.

3. The system as claimed in claim 1, wherein if it is determined that the primary-pulley pressure reaches the predetermined value before the shift actuator reaches the second position, the ECU fixes the shift actuator at a fifth position occupied at that time.
4. The system as claimed in claim 1, wherein the predetermined period of the primary-pulley pressure is changed in accordance with an oil temperature.
5. A vehicle, comprising:  
a prime mover;  
a V-belt type continuously variable transmission (CVT), comprising:  
primary and secondary pulleys arranged on input and output sides, the pulleys having V-grooves, the pulleys being subjected to primary-pulley and secondary-pulley pressures produced from a line pressure;  
a V-belt looped over the primary and secondary pulleys to engage in the V-grooves; and  
a shift actuator having a first position corresponding to a first target shift ratio, the shift actuator being operated to the first position to change a width of the V-grooves through a differential pressure between the primary-pulley and secondary-pulley pressures, conforming a shift ratio obtained from a rotational-speed ratio between the primary and secondary pulleys to the first target shift ratio; and  
an electronic control unit (ECU) which controls the shift actuator, the ECU being so programmed as to:  
determine if a tractive cruising of the vehicle is carried out during a stop of the prime mover; and  
change the first position of the shift actuator to a second position of the shift actuator corresponding to a second target shift ratio if it is determined that the tractive cruising is carried out during the stop of the prime mover, the second target shift ratio

being on a high-speed side with respect to a third position of the shift actuator corresponding to a third target shift ratio to be achieved if it is determined that the tractive cruising fails to be carried out during the stop of the prime mover

- 5 6. The vehicle as claim 5, wherein the second position of the shift actuator is located on the high-speed side with respect to a fourth position of the shift actuator corresponding to the shift ratio achieved by moving back the shift ratio during the tractive cruising of the vehicle by the secondary-pulley pressure produced at a start of the prime mover after the tractive cruising.

10

7. The vehicle as claimed in claim 5, wherein the ECU determines if the primary-pulley pressure reaches a predetermined value within a predetermined period after a start of the prime mover.

- 15 8. The vehicle as claimed in claim 7, wherein if it is determined that the primary-pulley pressure reaches the predetermined value before the shift actuator reaches the second position, the ECU fixes the shift actuator at a fifth position occupied at that time.

- 20 9. The vehicle as claimed in claim 7, wherein if it is determined that the primary-pulley pressure fails to reach the predetermined value, the ECU determines that the tractive cruising of the vehicle is carried out during the stop of the prime mover.

10. The vehicle as claimed in claim 7, wherein the predetermined period of the  
25 primary-pulley pressure is changed in accordance with an oil temperature.

11. A method of controlling a V-belt type continuously variable transmission (CVT) for a vehicle with a prime mover, the CVT comprising:

primary and secondary pulleys arranged on input and output sides, the pulleys

having V-grooves, the pulleys being subjected to primary-pulley and secondary-pulley pressures produced from a line pressure;

a V-belt looped over the primary and secondary pulleys to engage in the V-grooves; and

5 a shift actuator having a first position corresponding to a first target shift ratio, the shift actuator being operated to the first position to change a width of the V-grooves through a differential pressure between the primary-pulley and secondary-pulley pressures, conforming a shift ratio obtained from a rotational-speed ratio between the primary and secondary pulleys to the first target shift ratio,

10 the method comprising:

determining if the primary-pulley pressure reaches a predetermined value within a predetermined period after a start of the prime mover; and

changing the first position of the shift actuator to a second position of the shift actuator corresponding to a second target shift ratio if it is determined that the  
15 primary-pulley pressure fails to reach the predetermined value, the second target shift ratio being on a high-speed side with respect to a third position of the shift actuator corresponding to a third target shift ratio to be achieved if it is determined that the primary-pulley pressure reaches the predetermined value.

20 12. The method as claimed in claim 11, wherein the second position of the shift actuator is located on the high-speed side with respect to a fourth position of the shift actuator corresponding to the shift ratio achieved by moving back the shift ratio during a tractive cruising of the vehicle by the secondary-pulley pressure produced at the start of the prime mover after the tractive cruising.

25

13. The method as claimed in claim 11, further comprising:

fixing, if it is determined that the primary-pulley pressure reaches the predetermined value before the shift actuator reaches the second position, the shift actuator at a fifth position occupied at that time.

14. The method as claimed in claim 11, wherein the predetermined period of the primary-pulley pressure is changed in accordance with an oil temperature.